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SAVE GRAIN BY CONTROLLING

FACT SHEET

U.S. DEPARTMENT OF AGRICULTURE
Office for Food and Feed Conservation
Information Supplied by
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Livestock Pests!

LIVESTOCK pests cost the Nation an annual loss estimated at about a half billion dollars. Farmers bear the brunt of this in wasted feed, reduced meat and milk production, and damaged hides.

Horn, stable, and horse flies cut deeply into beef and milk output. Insect attacks keep pastured animals from grazing contentedly at a time when feeding costs normally are lowest. Cattle grubs do much damage to hides, and may reduce beef production. Ticks, lice, screwworms, and sheep keds take an immense toll by way of unproduced meat which should go to help feed people. Infested animals are "hard keepers" and cannot produce good quality meat.

If proper insecticides are used, all these losses can be considerably reduced, and perhaps some can be wiped out. More meat and milk production, with less use of grain and other scarce feeds, would then be the immediate result. In much the same way that county-wide control programs eliminated the deadly cattle fever tick from 99 percent of the United States, the horn fly, sheep ked, louse, and cattle grub on most farm and range animals can be overcome by united action.

To do these things it is important for farmers and ranchers to know:

1. The right insecticide, and where to get it.
2. The correct formula to use.
3. The proper method of application.
4. When the insects are most vulnerable.

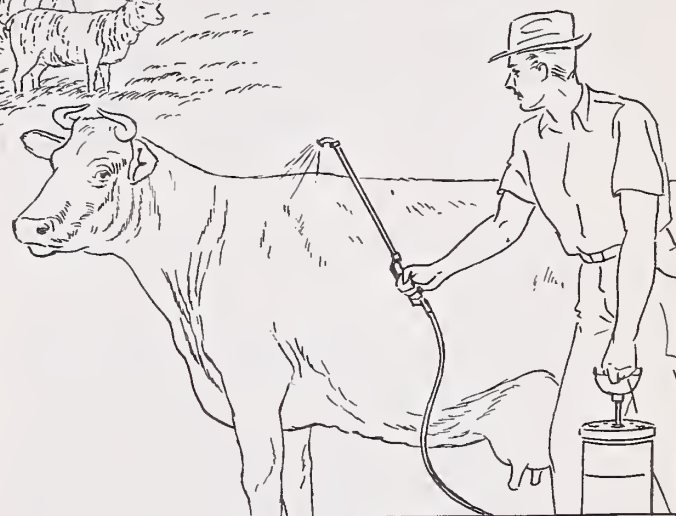
County agricultural agents and other farm specialists can render an important service by providing both information and leadership in county-wide programs to control livestock insect pests.

The following practices for controlling the major insects attacking livestock are recommended and should be brought to the attention of farmers and ranchers:

Control of Screwworms

Frequent inspection of animals for screwworm injury is important. Two preparations are useful. One or both are generally obtainable.

1. E. Q. Smear 62, an ointment consisting of the following ingredients (parts by weight):



| | |
|---|----|
| Diphenylamine..... | 35 |
| Benzene (benzol)..... | 35 |
| Turkey red oil (pH 10 or neutral)..... | 10 |
| Lampblack..... | 20 |
| 2. E. Q. Smear 82, an ointment consisting of the following ingredients (parts by weight): | |
| Diphenylamine..... | 35 |
| Benzene (benzol)..... | 32 |
| Triton X-300 | 2 |
| (sodium salt of an alkylated aryl poly-ether sulfate) | |
| n-butyl alcohol | 10 |
| Lampblack..... | 21 |

Apply ointment with a 1-inch paint brush. Push material well down into pockets made by maggots, and thoroughly smear area around wounds. Flies lay their eggs there. It is not necessary to remove dead worms from wounds.

Keep infested animals under observation. Treat twice weekly until wounds are fully healed. One gallon of the preparation is sufficient to treat 200 to 250 wounds.

When animals are to be shipped outside infested areas, it is important to inspect and treat them before shipment. Serious epidemics have developed in the Northern States because infested animals were brought in.

Control of Fleece Worms

The recommended mixture (parts by weight) is:

| | |
|-----------------------|----|
| Diphenyl..... | 10 |
| Triton 770..... | 1 |
| n-butyl alcohol | 5 |
| Benzol..... | 84 |

Preliminary research indicates that several of the new chlorinated insecticides at a strength of 2 percent are superior to 10 percent diphenyl in protecting animals from reinfestation, but the study has not progressed to a point where they can be recommended.

Control of Cattle Grubs

Rotenone is the only material recommended. Powder should be 325-mesh fineness and contain 5 percent rotenone. It may be applied as a spray, dust, dip, or wash.

Spray.—Use power sprayer with at least 400 pounds' nozzle pressure for fast and effective control. Complete saturation of *infested areas* on each animal is essential. Formula:

7½ pounds of 5-percent rotenone-bearing powder to 100 gallons of water.

Amount generally needed is 1 gallon per animal.

No wetting agent is needed if spray is applied with a power sprayer equipped with a suitable agitator.

Dust.—Treatment with 3 ounces of at least 1.5 percent rotenone dust is effective but slow because the dust must be rubbed into the hair. It should contain about 1 part by weight of rotenone-bearing powder to 2 parts by weight of a heavy diluent such as tripoli earth or pyrophyllite.

Dips.—Dip animal into rotenone-bearing solution and hold it in the vat for at least 2 minutes. Formula:

| | |
|---|-------------|
| Ground cube or derris (5 percent rotenone)..... | 10 pounds |
| Wetting agent (sodium lauryl sulfate)..... | 2 ounces |
| Water..... | 100 gallons |

Washes.—This treatment is effective but slow and laborious. Apply to infested area, scrubbing with stiff brush. Use one pint per grown animal. Formula:

| | |
|---|-----------|
| Ground cube or derris (5 percent rotenone)..... | 12 ounces |
| Granular laundry soap..... | 4 ounces |
| Warm water..... | 1 gallon |

Interval Between Treatments.—For most economical control, apply materials at 30-day intervals during grub season. For complete eradication apply at 2-week intervals, starting shortly before first grubs reach maturity and continuing as long as grubs appear on animal's back. Treatment of all cattle in an area is recommended. *Eradication can be accomplished only if area control measures are thorough.* New materials such as benzene hexachloride, chlordane, and chlorinated camphene have not shown promise of controlling grubs.

Control of Cattle Lice

DDT is the preferred material. There are several procedures:

1. If regular spraying has been done for horn fly, with two quarts per animal of 0.5 percent DDT (8 pounds 50 percent wettable powder in 100 gallons of water), this spraying also will control cattle lice. (A wettable powder is one specially prepared for mixing with water.)

2. If this horn fly application has not been made, use one of the following treatments in the fall:

a. One application of 0.5 percent DDT spray, 2 to 4 quarts per animal, or one application of 1.5 percent DDT spray using 1 to 1½ pints per animal as practiced in the Southeast.

b. One dipping in 0.5 percent DDT. To control the tail louse, repeat treatment in two weeks, or dip tails in 1.5 percent DDT after first dipping.

c. Two applications of 1 percent rotenone dust at 15-day intervals.

3. Spraying or dipping in rotenone solution (1 pound of 5-percent rotenone-bearing powder in 100 gallons of water) will control lice, provided the entire animal is thoroughly covered with the preparation. Repeat 14 to 18 days later.

4. Benzene hexachloride is effective, but is still in the experimental stage. Any use should be restricted to beef cattle and at concentrations not in excess of 0.06 percent *gamma isomer* in the form of a wettable powder applied as a spray or dip.

Control of Hog Lice

1. Spray or dip with 0.5 percent DDT when lice appear. Use 8 pounds of 50 percent DDT wettable powder in 100 gallons of water. One *thorough* treatment is sufficient.

2. 10 percent DDT dusted on animals and in bedding is recommended.

3. Benzene hexachloride is effective against lice and mange, but additional research is necessary before it can be recommended.

Control of Poultry Lice

1. Sodium fluoride, 1 ounce in 1 gallon of water, may be used as a dip.

2. Sodium fluoride may be applied by "pinch" or dusting method.

3. A 5 percent DDT dust applied to the birds is effective.

4. Nicotine sulfate may be applied to roosts. *This, however, will not control head lice.*

Goat Lice, Sheep Ticks, and Lice

One dipping in an emulsion or suspension containing 0.2 to 0.25 percent of DDT will control goat lice, sheep ticks, and sheep lice. A 0.25 percent DDT suspension is made by adding 4 pounds of a 50 percent DDT wettable powder to 100 gallons of water.

Sheep ticks can also be controlled economically by dipping the sheep in rotenone-bearing solution prepared by adding 6 to 8 ounces of ground derris or cube (5 percent rotenone) to 100 gallons of water.

Flies Attacking Livestock

In undertaking control of external livestock parasites, thought should be given to the various species that may be present. Experience shows, for example, that effective horn fly control through use of DDT also will control or reduce infestations of other parasites such as lice and ticks.

Strengths and amounts of DDT used will vary with the method of application. Some operators will use dipping vats and others will use hand or small or large power sprayers. The net effect, however, will be largely the same *if the proper insecticide is used and if a thorough job is done.*

Horn Flies.—Wettable powder is the preferred form of DDT to use against horn flies, as it is economical and effective under widely varying conditions. No injurious results have been noted in treated animals. A good oil emulsion, properly formulated and mixed, can be used. At present it is difficult to designate specific emulsions for general use.

The strength of DDT spray and the amount to be used on cattle depends to some extent on the equipment available, type of cattle, and local conditions. A spray containing 0.5 percent DDT (8 pounds of 50 percent DDT wettable powder per 100 gallons of water) applied at an average rate of 2 quarts per mature animal is the most generally effective and practical application.

Some States recommend 0.25 percent DDT applied at the same rate. The higher percentage of DDT, however, will usually protect cattle for 1 month, while the 0.25 percent DDT will be effective about 3 weeks. Several Southeastern States recommend sprays containing up

to 1.5 percent DDT, with use of only 1 to 1½ pints on the average mature animal. The amount of DDT actually applied is, therefore, essentially the same or slightly less than the amount applied when 2 quarts of 0.5 percent DDT spray are used. If the higher concentrations of DDT are used, it is important to limit the quantity of spray per animal, as recommended, to avoid overdosage and waste.

Other Flies.—DDT sprays are ineffective in the control of stable flies when applied only to the livestock. These pests can be greatly reduced, however, by spraying barns, sheds, and other places where flies rest.

To control stable and house flies, sprays containing 2.5 to 5 percent DDT should be applied to interiors of barns, sheds, and other places where flies congregate. Wettable powders, emulsions or oil solutions are recommended for use on surfaces. The most effective application is with a small power or knapsack sprayer using an amount which completely wets interior surfaces without appreciable run-off. Pressure of power sprayers should be under 100 pounds to avoid waste from rebound of the spray. Spraying of water cups, mangers, and feed should be avoided. *DDT has not been found effective in control of horse flies and deer flies.*

Control of Ticks

Gulf Coast and Lone Star Ticks.—Preliminary indications are that some control of these pests can be attained by use of DDT sprays or dips. DDT sprays at strengths as high as 2.5 percent are not completely effective against partially engorged ticks. Concentrations as low as 0.75 percent, however, when thoroughly applied will kill flat or unfed ticks, and will give 2 to 3 weeks' protection against reinfestations.

Winter Ticks.—A DDT spray containing 0.5 percent DDT or a 5-percent DDT powder, when thoroughly rubbed into the hair of the animal, will produce good results.

• (*Caution.*—Most chemicals used as insecticides are poisonous. They should be handled with care and used according to directions. Keep them away from children and store in plainly marked containers away from food and feed materials.)

